Bay Area aerial imaging startup teams up to detect disease in crops before outbreaks

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An Oakland-based startup is sending its aerial imaging technology to the Midwestern plains to help farmers detect pests and diseases in their corn and soybean fields before an outbreak.

Ceres Imaging announced this week that the startup, which raised $5 million for its Series A fund back in May, will partner with an agricultural cooperative serving in five counties in central Illinois. The partnership is a test, which Ceres Imaging's founder Ashwin Madgavkar hopes will help spread its technology across the United States.

Madgavkar said Ceres Imaging was inspired by his time working at large sugar cane farms in Brazil and Colombia, seeing how farmers would spray fertilizer and pesticides without taking into account effects on the soil or plants.

"This led to a lot of yield being left on the table and creating environmental damage," Madgavkar said. "I saw a lot of inefficiency on how these decisions were made."

Madgavkar then went to Stanford and was introduced to aerial imagery. He said using aerial imagery to collect data on the crops to make better decisions was a no-brainer.

Using sensors equipped on a plane flying at low altitudes, the company collects data and relays the information to the farmers. For the soybeans and corn, they represented a different challenge as the stalks and leaves

can grow large enough to create a canopy, leaving what's happening beneath it nearly invisible. But Ceres Imaging said it pierces through the canopy using wavelength-based spectroscopy to detect any abnormalities—especially pests and diseases.

Before Ceres Imaging's expansion to soybeans and corn, the company worked with farmers and vintners in California, working mainly to detect water stress and scarcity on the farm, according to Madgavkar. The farms paid Ceres Imaging on a subscription basis.

Other aerial imagery firms in the agricultural space are competing with Ceres Imaging to woo farmers.

San Leandro-based TerrAvion has operated in the space since 2014 and raised $10 million for its Series A funding earlier this year. TerrAvion, also a subscription-based company, shoots overhead shots of farms and sends photos to farmers overnight via cloud.

"Other companies are focused on flying," Madgavkar said. "We blend sensors and the science and the flying into one. We have been the only one to put together data sets which allow farmers to make decisions."

Madgavkar said he sees his company growing into other industries like forestry and oil. He likened his company's trajectory to how Tesla went from a niche product to one which serves a canvas of customers.

He also believes that with climate change leading to more extreme weather in the coming years, continuous and reliable surveillance of crops via aerial imaging will become critical to a farmer's success.

"We are trying to use tech to help farms cope with changing environment," Madgavkar said. "Farmers are beset by a variety of problems with extreme weathers like the fires in Southern California or hurricanes in Texas and Florida. And who knows when the drought will be back here? This is going to affect us all because we've all got to eat."